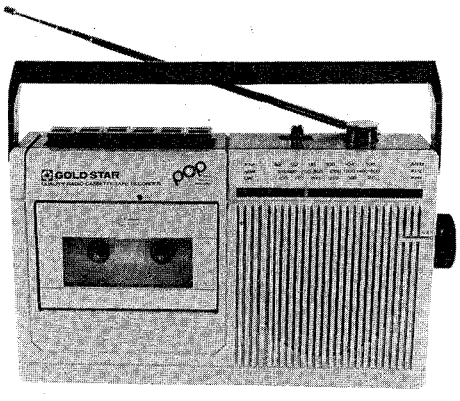
SV3-169B

SV3-169B

Gold Star Audio

SERVICE MANUAL

for service technician



Gold Star Co., Ltd.

STEREO CASSETTE RECORDER

TCR-102 (FM/MW/LW)

SPECIFICATIONS

This specifications may be changed for improvement of performance without notice.

Radio section

Circuit system	Superheterodyne AM/FM Mpx stereo
Antenna	MW/LW: Ferrite ant. FM: Rod ant.
Frequency range	MW: 525-1605 KHz LW: 150-350 KHz FM: 88-109 MHz
Sensitivity	MW: 56dB LW: 60dB FM: 20dB
Signal to noise radio	AM: 36dB FM: 50dB

Cassette section

Circuit system	4 Track 2 ch.
Recording system	DC Bias
Erasure system	DC Erasure
Tape speed	4.75cm/sec
F.F.& REW time	100 sec
Wow & Flutter	0.2% WRMS
Requency response	PB: 125-8000 Hz REC/PB: 125-8000 Hz
Signal to noise ratio	35dB

General

Power output	1W+1W
Power supply	AC: 220V DC: 6V ("C" cell 1.5x4)
Power consumption	3W
Semi-conductors	2IC's, 2TR's, 9Diodes
Speaker	90mm (4Ω) x 2
Weight	2kg (without batt.)
Dimensions	92(W)x202(H)x301(D) mm

Printed in Korea Mar., 1983

To service technician

The service manual contains detailed service information for Model TCR-102.
Illustration of the model appears on front cover.
Please give attention to next caution.
The followings are the safety servicing guidelines for all audio amplifiers and radio receivers.
Service work should be performed only after you are familiar with all of the following safety guide.
To do otherwise increases the risk of potential hazards and injury to the user.

Safety guide

1. Be sure that all components are positioned in such a way to avoid possibility of adjacent components shorts. This is especially important on those chassis which are transported to and from the rapair shop.
2. Always replace all protective devices such as insulators and barriers after working on a receiver
3. Check for frayed insulation on wires including the AC-cord. Also check across-the-line components for damage and replace if necessary.
4. All fuse and certain resistors and capacitors which are of the flameproof type must be replaced with exact same types to prevent potential fire hazard.
5. After re-assembly of the set always perform an AC-leakage test on the exposed metallic parts of the cabinet such as the knobs, antenna terminal, etc. to be sure the set is safe to operate without danger of electrical shock.

To order repair parts

Parts orders must contain;

1. Model Number — found on front cover in this service manual.
2. Part Number, Description and Quantity

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DIAL CORD ARRANGE MENT

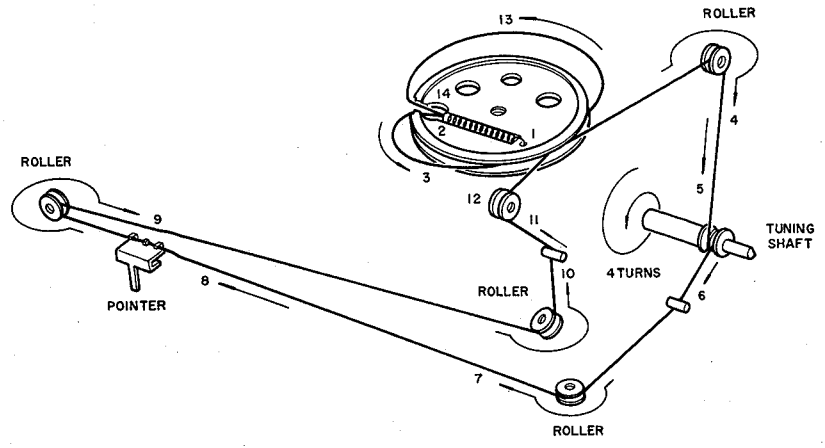


Fig. 1

Set the varicon to minimum frequency and string the cord by following the number sequence order as shown in Fig. 1.

ALIGNMENT INSTRUCTIONS

This cassette radio has been aligned at the factory and normally will not require further adjustrnent As a result, it is not recommended that any attempt is made to modificate any circuit. If any parts are replaced or if anyone tampers with the adjustment, realignment may be necessary.

Test equipment required

1. AM/FM signal generator
2. IF sweep generator (10.7MHz) for FM
3. IF sweep generator (455 KHz) for AM
4. Standard dummy antenna for FM
5. Standard loop antenna for AM
6. VTVM
7. Oscilloscope
8. Frequency counter

Radio Alignment

Adjustment and test points

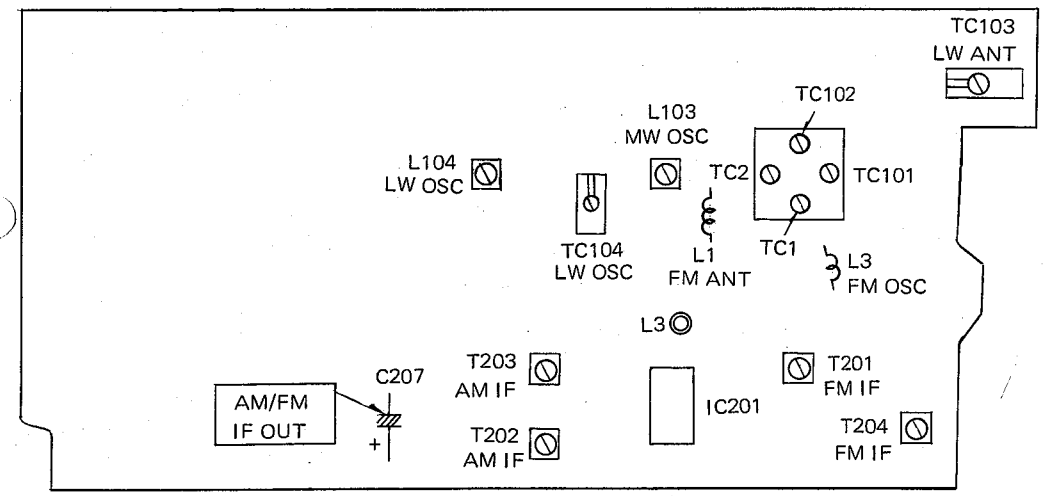


Fig. 2

AM/FM Alignment Chart

Step	Item		Instrument & Frequency	Test Point: Input Terminal	Test Point: Output Terminal	Dummy Ant.	Dial Setting	Adjustment Point	Purpose
1	AM-IF		AM IF sweep generator and oscilloscope or AM IF genescope	AM IF Input	Detector output (R203)	Generator output Probe "A"	Tuning Gang counter-clockwise (Lowest freq.)	T203 T202	Adjust for the scope Pattern with specified marker (IF freq.) as illustrated in fig. 3 (Note 1)
2	MW Oscilla-tor	a	AM SSG 515 KHz (400Hz, 30% Mod) and VTVM	MW wave magnet ant.	Speaker output terminal or detector output	None	Tuning-Gang counter-clockwise (Lowest freq.)	L103	Adjust for maximum gain.
		b	AM SSG 1650 KHz (400Hz. 30% Mod) and VTVM				Tuning-Gang clockwise (Highest freq.)	TC102	
		c	Repeat the above item 2-(a), (b) for minimum change.						
3	MW Track-ing	a	AM SSG 600 KHz (400Hz, 30% Mod) and VTVM	MW wave-magnet ant.	Speaker output terminal or detector output	None	Tune to signal	L101 MW ant. coil	Adjust for maximum gain.
		b	AM SSG 1400KHz (400Hz, 30% Mod) and VTVM					TC101	
		c	Repeat the above item 3-(a), (b) for minimum change						
4	LW OSC	a	AM SSG 150 KHz (400Hz, 30% Mod) and VTVM	LW wave magnet ant.	Speaker output terminal or detector output	None	Tuning gang fully counter clockwise (Lowest fre.)	L104	Adjust for maximum gain
		b	AM SSG 350 KHz (400Hz, 30% Mod) and VTVM				Tuning gang fully clockwise (Highest fre.)	TC104	
		c	Repeat the above item 4-(a), (b) for minimum change.						

AM/FM Alignment Chart (Cont'd)

Step	Item		Instrument & frequency	Test Point		Dummy Ant	Dial Setting	Adjustment Point	Purpose
				Input Terminal	Output Terminal				
5	LW Tracking	a	AM SSG 160 kHz (400Hz, 30% Mod) and VTVM	LW wave magnet ant.	Speaker Output terminal or detector output	None	Tune to signal	L102 LW ant. coil	Adjust for maximum gain
		b	AM SSG 330kHz (400Hz, 30% Mod) and VTVM					TC103	
		c	Repeat the above item 5-(a), (b) for minimum change.						
6	FM IF S-curve		FM IF sweep generator and oscilloscope or FM IF genescope	FM IF input	FM Det. output (R203)	Generator output	Tuning Gang fully counter clockwise	T201 T204	Adjust for scope pattern with specified marker (10.7 MHz) as illustrated in fig. 5, 6 (note (2), (3))
7	FM oscillator	a	FM SSG 87 MHz (400Hz, 22.5kHz Dev.) and VTVM	Ant. input	Speaker output terminal	Generator output "Probe B"	Tuning Gang fully counter clockwise (Lowest freq.)	L3	Adjust for maximum gain
		b	FM SSG 109MHz (400Hz, 22.5kHz Dev.) and VTVM	Ant. input	Speaker output terminal	Generator output "Probe B"	Tuning Gang fully clockwise (Highest freq.)	TC1	Adjust for maximum gain
		c	Repeat the above item 7-(a), (b) for minimum change.						
8	FM Tracking	a	FM SSG 90MHz (400Hz, 22.5kHz Dev.) and VTVM	Ant. input terminal	Speaker output terminal	Generator output "Probe B"	Tune to signal	L1	Adjust for maximum gain.
		b	FM SSG 106 MHz (400Hz, 22.5kHz Dev.) and VTVM	Ant. input terminal	Speaker output terminal	Generator output "Probe B"	Tune to signal	TC2	Adjust for maximum gain
		c	Repeat the above item 8-(a), (b) for minimum change.						

Note 1.: Adjust T203 and T202 to get maximum gain and symmetry in IF response as shown in Fig. 3

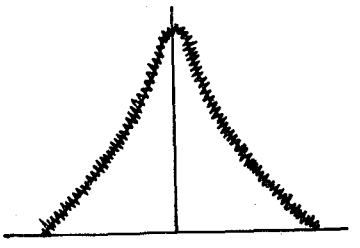


Fig. 3
IF response for weak input signal.

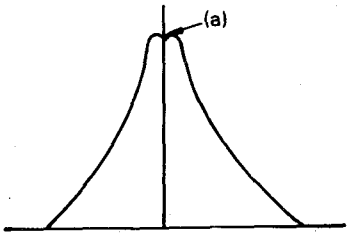


Fig. 4
IF response for strong input signal.

After adjust IF response for weak input signal, supply strong input signal and also adjust T203, and T202 to make part (a) flat as shown in Fig. 4.

Note 2.: Adjust output of sweep generator so that noise appears on IF-curve as shown in Fig. 5 below and adjust T201, for maximum indication.

Note 3.: Adjust T204 to be IF-curve into S-curve (See Fig. 6) and adjust T204 so that declined part of S-curve has to be just linear.

If ceramic filter is used in RF part, adjust T204 so that part (A) and part (B) are symmetrical on either side of vertical line, because the marker of 10.7MHz on sweep generator is not on the center of S-curve.

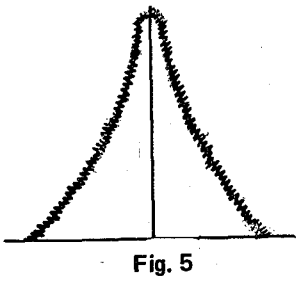


Fig. 5

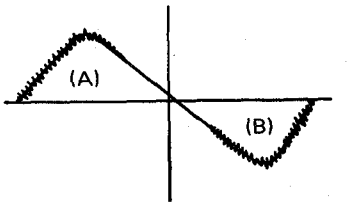
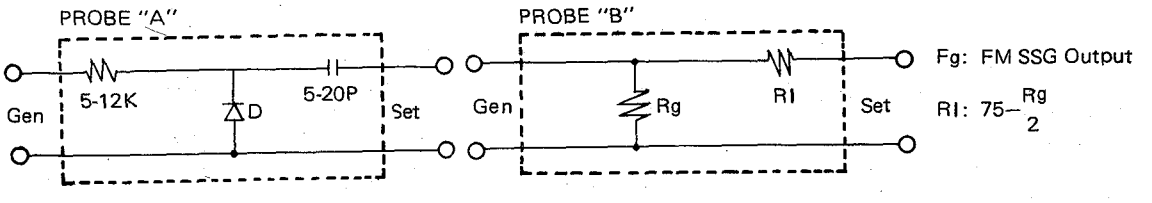
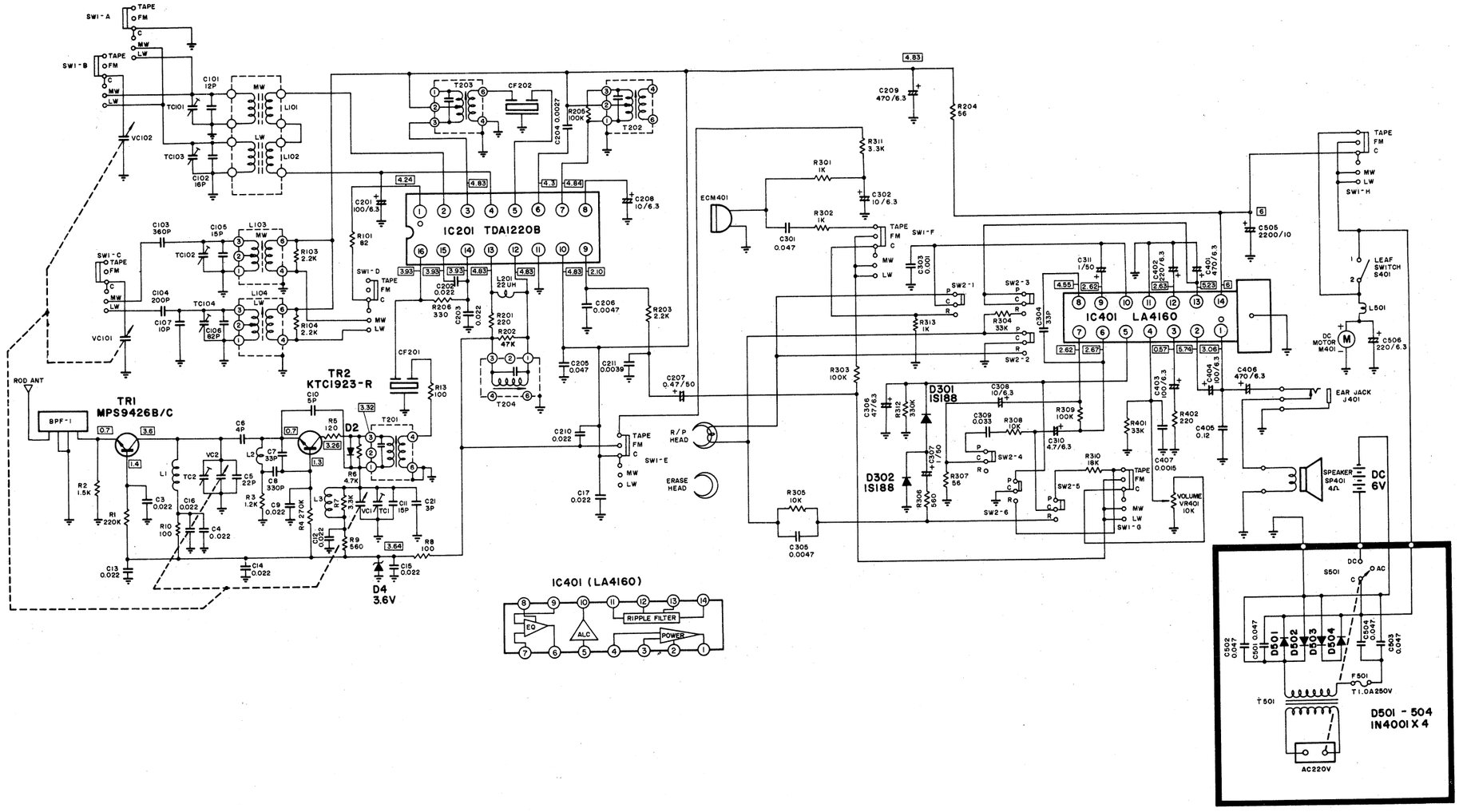


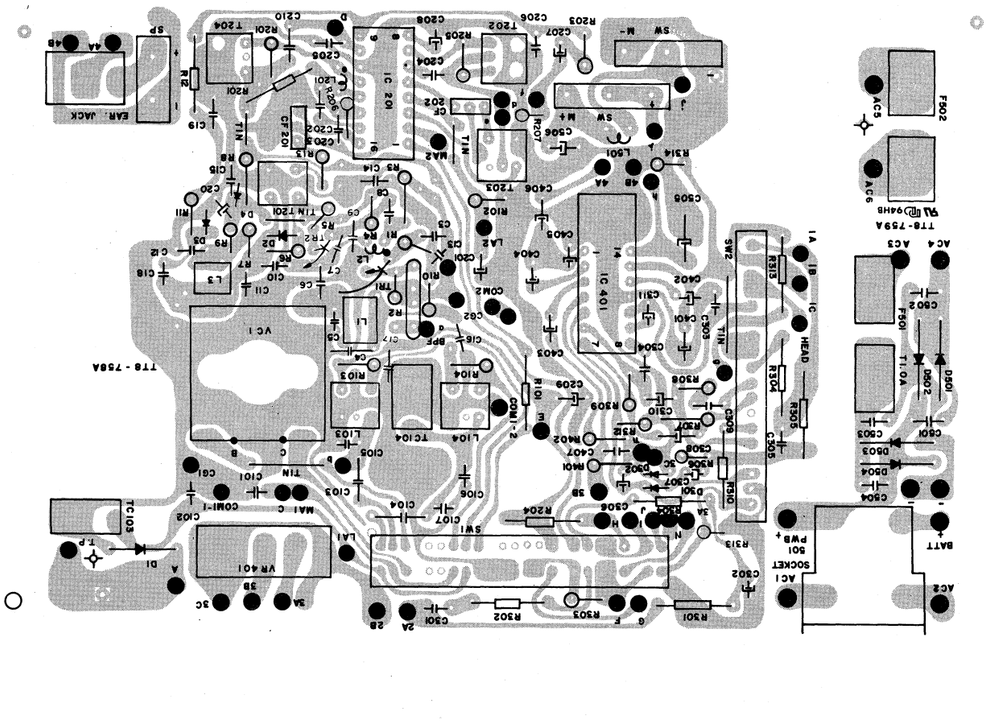
Fig. 6



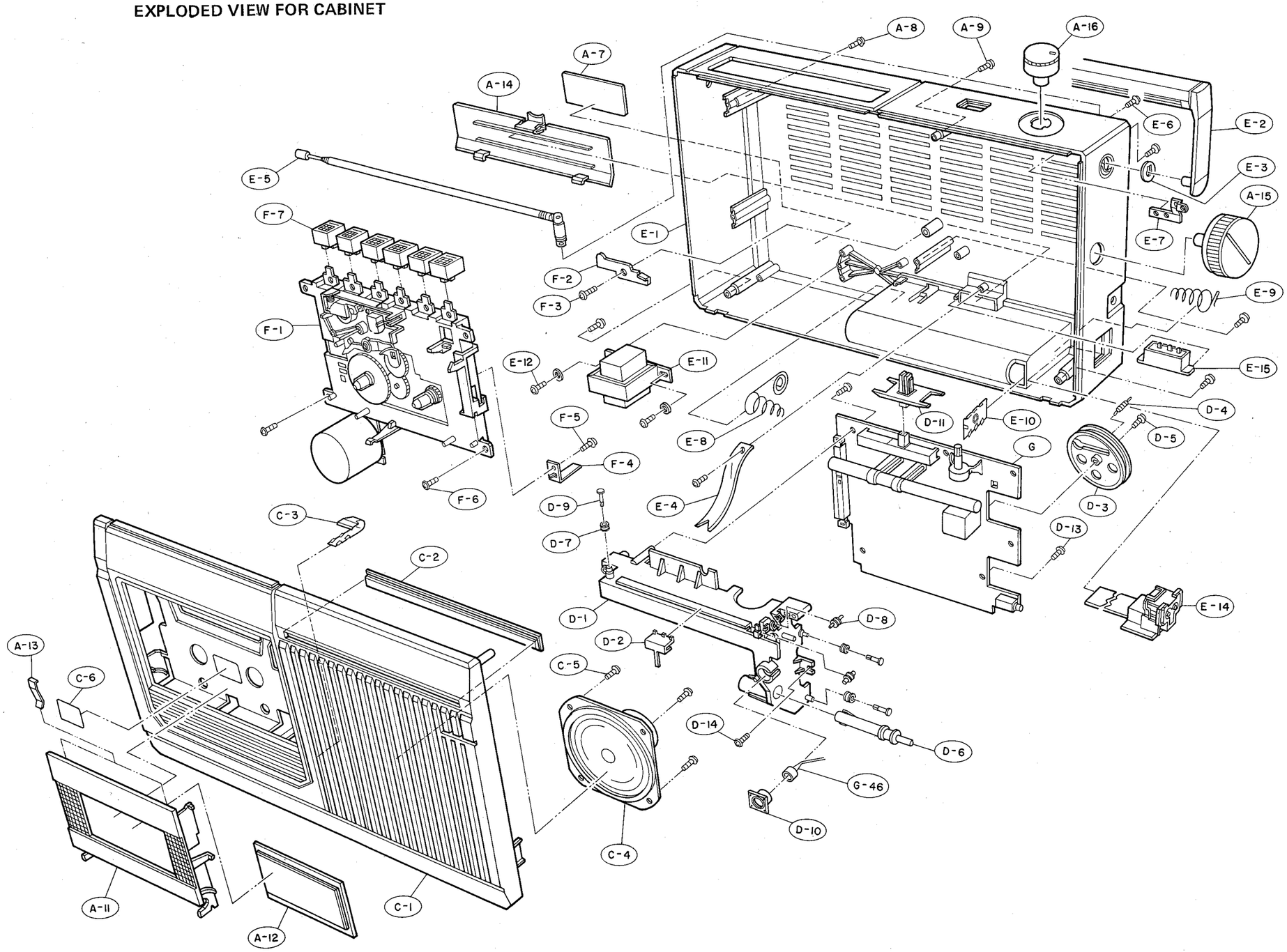
SCHEMATIC DIAGRAM



ELECTRICAL PARTS LOCATION



EXPLODED VIEW FOR CABINET



PARTS LIST FOR CABINET EXPLODED VIEW

This parts list is only applicable to Gold Star standard. Unless the set under service is Gold Star standard, be sure that all parts No's are subject to modifications.

SYMBOL NO	PART NO	DESCRIPTION	SYMBOL NO.	PART NO.	DESCRIPTION
A-8	353-067F	SCREW, SPECIAL	E	215-539A	CASE AY, REAR
			E-1	217-321A	CASE, REAR
A10	618-101A	CORD, POWER	E-2	261-013A	HANDLE
A-11	217-322A	CASE, CST			
A-12	236-150B	WINDOW, DOOR	E-4	455N002C	RIBBON
A-13	442-211A	SPRING, CST	E-5	532-006B	ANT, ROD
A-14	221-399A	COVER, BATTERY	E-6	MAC1839L	SCREW
A-15	271-145B	KNOB, TUNING	E-7	562-603A	LUG, ANT
A-16	272N085A	KNOB, VOLUME	E-8	442-703A	SPRING, BATTERY
C	215-538A	CASE AY, TRONT	E-9	442-703B	SPRING, BATTERY
C-1	217-320A	CASE, FRONT	E-10	256N404A	PLATE, BATTERY
C-2	236-172A	WINDOW, SCALE	E-11	641-671P	TRANS, POWER
C-3	442-701A	SPRING	E-12	353-052C	SCREW
C-4	541-169A	SPEAKER	E-14	577-005B	SOCKET, 2P
C-5	353-052N	SCREW			
C-6	256N261A	PLATE, REFLECTION			
			F-1	412-069A	DECK (PM-22)
D	311-216A	CHASSIS AY	F-2	321-530A	BRACKET, REC
D-1	313-243A	CHASSIS	F-3	353-0520	SCREW
D-2	361-610A	POINTER	F-4	442-702A	SPRING, REC
D-3	431N088A	PULLEY DIAL	F-5	353-022A	SCREW
D-4	442N073A	SPRING	F-6	353-025G	SCREW
D-5	MPC1530J	SCREW	F-7	275-071A	BUTTON, DECK
D-6	423-101A	SHAFT, TUNING	G	511-758A	PWB AY
D-7	434N003F	ROLLER	G-46	542N023B	MIC, CONDENSER
D-8	434-018A	ROLLER			
D-9	423N254A	SHAFT, ROLLER			
D-10	341N045B	BUSHING, MIC			
D-11	273-345A	KNOB, S/W			
D-13	TRQ1830J	SCREW			
D-14	TRQ1839J	SCREW			

SERVICE PARTS LIST FOR DECK MECHANISM

SYMBOL NO	PART NO	DESCRIPTION	SYMBOL NO	PART NO	DESCRIPTION
2	99P-0045	R/P HEAD	36	99P-0022	CAPSTAN SUPPORT
3	99P-0002	C SPRING	37	99P-0023	IDLER ASSY
4	99P-0003	PINCH ARM ASSY	38	99P-0024	FLYWHEEL ASSY
5	99P-0004	AUTO STOP LEVER	40	99P-0048	BELT
6	99P-0005	C SPRING	43	99P-0026	LEVER LOCK
7	99P-0006	PAUSE SPRING	44	99P-0027	ACTING PLATE
8	99P-0046	E HEAD	46	99P-0028	T SPRING
11	99P-0007	HEAD BASE	47	99P-0029	FR LEVER
13	99P-0008	INTER LOCK	49	99P-0030	C SPRING
14	99P-0009	DOOR LOCK	50	99P-0031	PAUSE LEVER ASSY
15	99P-0010	T SPRING	51	99P-0032	C SPRING
17	99P-0011	C SPRING	52	99P-0033	C SPRING
18	99P-0012	S REEL	53	99P-0034	PAUSE LOCK
19	99P-0013	WASHER	54	99P-0035	SPRING
20	99P-0014	T REEL	55	99P-0036	LEAF SWITCH
22	99P-0015	SPACER	56	99P-0037	CASSETTE HOLDER
23	99P-0016	PAUSE ARM (B)	57	99P-0038	LEVER HOLDER
24	99P-0017	P GEAR	58	99P-0039	LEVER LOCK HOLDER
25	99P-0018	PAUSE CAM	60	99P-0040	REC LEVER
26	99P-0019	EARTH PLATE	69	99P-0041	C SPRING
30	99P-0020	C SPRING	103	99P-0042	CS SPRING
33	99P-0047	MOTOR BRACKET	C	99P-0049	MOTOR ASSY

EXPLODED VIEW FOR DECK MECHANISM